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Strategies for Coping with Pain in Chronic Sciatica in Patients Treated in Neurological Outpatient Clinic

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Summary

Introduction: Back pain is one of the most common causes of deterioration of the psychophysical condition in people. The pain becomes a source of stress for patients and that is why they activate strategies to cope with it. These are the behaviours that patients undertake independently in difficult situations. The aim of this paper was to learn strategies for coping with sciatic pain using the example of patients of the Neurological Outpatient Clinic.

Materials and methods: The research was carried out by means of diagnostic survey. The research tools were as follows: own questionnaire, Coping with Pain Strategy questionnaire. The research was carried out among patients of the Outpatient Neurological

Clinic BCO of the City Hospital named after John Paul II in Bielsko-Biała in the period from March to September 2017. Before the beginning of the study, the consent of the director of the BCO Municipal Hospital named after John Paul II in Bielsko-Biała was obtained to carry out the research.

Findings: The strategies of coping with pain which the respondents chose most frequently were increased behavioural activity, declared coping and diverting attention, the patients were least likely to choose the catastrophizing strategy, re-evaluating pain and ignoring the sensations.

Conclusions: Among the strategies for coping with pain in patients with sciatica, the behavioural strategy was dominant, i.e. increased behavioural activity, then the respondents chose the cognitive techniques: declared coping and diverting attention. The type of strategies implemented was influenced by: the time elapsed from the diagnosis of sciatica, the severity of pain and sex of the patient.

Key words: chronic sciatica, strategies for coping with pain, chronic disease.

Introduction

The aetiology of pain in chronic sciatica is not clear and therefore requires a holistic approach to the patient. The impact of the mental sphere on the somatic sphere is nowadays a well-known problem, but still not well recognized in the diagnostics of chronic diseases [1,2].

In a chronic disease, the patient's approach to disease, pain, suffering, and symptoms they have to struggle with and the limitations that stand in their way are extremely important. The same disease may cause completely different symptoms in each person, with varying degrees of severity, at a completely different time. It may be accompanied by fear, anxiety, depressed mood. The positive adaptation of a person to a serious disease is possible, but it depends on many factors. The adaptation to an disease includes the acceptance of the role of the patient in life and fulfilment of the functions resulting from it, caring for oneself and the surroundings and maintaining satisfying interpersonal relations [3,4]. The literature provides the three models describing the interaction between the mental and the physical sphere that

occur in a chronic disease. One of them is a model based on the assumption of personality and characterological determinants [4]. Another of the models included in the psychology of health, neuropsychology, psychophysiology and psychosomatics, binding the physical and mental area is the biopsychosocial model [5]. The last of the models, which refers to the interaction of the physical and mental spheres, is the theory of social learning [6].

Materials and methods

The research was carried out among 100 patients of the Outpatient Neurological Clinic BCO of the City Hospital named after John Paul II in Bielsko-Biala in the period from March to September 2017. Before the study began, a written consent was obtained from the director of the BCO Municipal Hospital named after John Paul II in Bielsko-Biała to carry out the research. The respondents were thoroughly informed about the research objective and the principle of anonymity and voluntary participation in the research before the study began. The criteria for including patients in the study were as follows: the consent of the patient and diagnosed chronic sciatica. The study involved the questionnaire of the Strategies of Coping with Pain (CSQ) and the authors' questionnaire.

Statistical methodology

The statistical analysis was performed in the PQStat 1.6.6, PSPP 1.0.1 and MS Office 2016 (RS for Excel) programs. In all the analyses, the relevance level was set at $p=0.05$. Significance at the lesser level allowed to reject the null hypothesis and accept the alternative hypothesis suggesting dependencies exist. In the case of quantitative variables, the difference between the two mean results independent of each other was checked using the Mann-Whitney U test. Correlations between rank and quantitative variables were verified using the Spearman rank correlation coefficient.

Findings

The detailed sociodemographic characteristics of the studied group are presented in Table I.

Table I. Sociodemographic characteristics of the examined group

		Total (n=100)	Male (n=41)	Female (n=59)
Age	Up to 50	43.0%	39.0%	45.8%
	51-60	41.0%	36.6%	44%
	Over 60	16.0%	24.4%	10.2%
Education	Elementary	6.0%	9.8%	3.4%
	Vocational	38.0%	39.0%	37.3%
	Secondary	35.0%	31.7%	37.3%
	Higher	21.0%	19.5%	22.0%
Professional activity	Employed	54.0%	51.2%	55.9%
	Disability pension	13.0%	4.9%	18.6%
	Pension	19.0%	34.1%	8,6%
	Unemployment	14.0%	9.8%	16.9%
Place or residence	Town/city	53.0%	48.8%	55.9%
	Countryside	47.0%	51.2%	44.1%
Marital status	Married	72.0%	70.7%	72.9%
	Single	8.0%	9.8%	6.8%
	Widowed	12.0%	14.6%	10,1%
	Divorced	8.0%	4.9%	10.2%
Living:	with family	85.0%	87.8%	83,1%
	alone	15.0%	12,2%	16,9%

Key: n- number of people

Source: own calculations

Detailed data on this subject are provided in Table II.

Table II. Characteristics of the health condition of the examined group

Own survey questions	Answers of the respondents	Sex		
		Total (n=100)	Male (n=41)	Female (n=59)
Time elapsed since the diagnosis of sciatica	Up to 2 years	51.0%	48.8%	52.5%
	3-6 years	31.0%	29.2%	32.2%
	Over 6 years	18.0%	22.0%	15.3%
Frequency of using the neurological outpatient clinic	Once a month	12.0%	5.3%	16.4%
	Once every three months	13.0%	13.2%	12.7%
	Once every six months	38.0%	36.8%	38.2%
	Once a year	37.0%	44.7%	32.7%
The degree of pain sensation on the NRS scale	Weak pain	32.0%	31.7%	32.2%
	Average pain	44.0%	48.8%	40.7%
	Severe pain	21.0%	14.6%	25.4%
	Very strong pain	3.0%	4.9%	1.7%
Interpretation of the BMI index	Underweight	1.0%	0%	1.7%
	Correct value	54.0%	22.0%	76.3%
	Overweight	36.0%	61.0%	18.6%
	The first degree of obesity	8.0%	14.6%	3.4%
	The second degree of obesity	1.0%	2.4%	0%
Medication taken in chronic sciatica *	Non-opioid analgesics	40.0%	34.1%	44.1%
	Weak opioids	48.0%	51.2%	45.8%
	Strong opioids	11.0%	12.2%	10.2%
	Anti-inflammatory medication	19.0%	14,6%	22.0%
	Medication reducing muscle tone	34,0%	43,9%	27,1%
Time/situations of experiencing pain	Yes, especially in the morning	17,0%	12,2%	20,3%
	Yes, especially in the evening	21.0%	24.4%	18.6%
	Yes, regardless of the time of day	35.0%	41,5%	30,5%
	Yes, in a sitting position	15,0%	12,2%	16,9%
	Other	5,0%	2,4%	6,9%

Key: n- number of people

Source: own calculations

* open question - answers are not added

Strategies for coping with pain in the researched group are listed in Table III.

Table III. Results of the questionnaire for the strategy of coping with pain (CSQ)

Strategies for coping with pain	Male (n=41)	Female (n=59)	Total (n=100)
Diverting attention			
Average	19.39	17.63	18.35
Median	20.00	18.00	19.50
Standard deviation	4.57	4.97	4.86
Minimum	6.00	9.00	6.00
Maximum	30.00	27.00	30.00
Revaluation of pain sensations			
Average	12.93	12.15	12.47
Median	13.00	12.00	12.00
Standard deviation	4.10	4.59	4.39
Minimum	3.00	0.00	0.00
Maximum	20.00	28.00	28.00
Catastrophizing			
Average	10.90	13.46	12.41
Median	11.00	12.00	11.50
Standard deviation	4.59	6.30	5.77
Minimum	0.00	3.00	0.00
Maximum	21.00	30.00	30.00
Ignoring sensations			
Average	14.98	12.66	13.61
Median	15.00	12.00	13.00
Standard deviation	5.76	4.67	5.25
Minimum	5.00	5.00	5.00
Maximum	27.00	22.00	27.00
Praying/Hoping			
Average	18.32	16.41	17.19
Median	18.00	16.00	17.00
Standard deviation	7.35	6.79	7.05
Minimum	4.00	4.00	4.00
Maximum	30.00	33.00	33.00
Declared coping			
Average	19.39	18.20	18.69
Median	20.00	18.00	19.00
Standard deviation	5.61	4.44	4.96
Minimum	6.00	9.00	6.00
Maximum	30.00	29.00	30.00
Increased behavioural activity			

Average	19.39	18.61	18.93
Median	19.00	19.00	19.00
Standard deviation	5.48	4.90	5.13
Minimum	7.00	8.00	7.00
Maximum	30.00	30.00	30.00

Key: n- number of people

Source: own calculations

Relationships between sociodemographic variables and strategies for coping with pain in the researched group are presented in Table IV.

Table IV. Evaluation of the relationship between sociodemographic variables and strategies for coping with pain in the researched group: individual strategies for coping with pain depending on patient's sex

Strategies for coping with pain	Sex					
	Male		Female		Mann-Whitney U test	
	M	SD	M	SD	Z	p
Diverting attention	19.39	4.57	17.63	4.97	-1.904	.057
Revaluation of pain sensations	12.93	4.10	12.15	4.59	-1.203	.229
Catastrophizing	10.90	4.59	13.46	6.30	-1.414	.157
Ignoring sensations	14.98	5.76	12.66	4.67	-1.965	.049
Praying/Hoping	18.32	7.35	16.41	6.79	-1.362	.173
Declared coping	19.39	5.61	18.20	4.44	-1.378	.168
Increased behavioural activity	19.39	5.48	18.61	4.90	-.731	.465

Key: M - medium; SD - standard deviation; Z- value of Mann-Whitney U test;

p- significance of the Mann-Whitney U test

Source: own calculations

The relationship between the clinical characteristics of the subjects and the pain management strategies they use - an analysis of the extent to which the severity of pain affects the initiation of pain coping strategies is presented in Table V

Table V. Strategies for coping with pain depending on the severity of pain

		The degree of pain sensation on the NRS scale
Diverting attention	Rho	-.394
	p	<.001
Revaluation of pain sensations	Rho	-.281
	p	.005
Catastrophizing	Rho	.306
	p	.002
Ignoring sensations	Rho	-.346
	p	<.001
Hoping	Rho	.121
	p	.231
Declared coping	Rho	-.448
	p	<.001
Increased behavioural activity	Rho	-.423
	p	<.001
Pain control	Rho	-.601
	p	<.001
Possibility to reduce pain	Rho	-.678
	p	<.001

Key: Rho - Spearman's correlation coefficient; p - significance of the Spearman's correlation coefficient

Source: own calculations

Pain control/ability to reduce pain.

Studies show that the majority of patients partially control pain and are able to reduce it (Table VI).

Table VI. Results of the CSQ Questionnaire - pain control; possibility to reduce pain

	Pain control	Possibility to reduce pain
Average	3.98	3.85
Median	4.00	4.00
Standard deviation	1.30	1.31
Minimum	.00	.00
Maximum	6.00	6.00

Source: own calculations

The relationship between the clinical characteristics of the respondents and the pain management strategies they use - an analysis of the impact of the length of time from the diagnosis of sciatic neuralgia to the initiation of individual strategies for coping with pain is presented in Table VII.

Table VII. Individual strategies for coping with pain depending on the length of time elapsed since the diagnosis of sciatica

Strategies for coping with pain		Time elapsed since the diagnosis of chronic sciatica
Diverting attention	Rho	-.080
	P	.430
Revaluation of pain sensations	Rho	-,051
	P	,617
Catastrophizing	Rho	,205
	P	,041
Ignoring sensations	Rho	-,170
	P	,091
Praying/Hoping	Rho	,280
	P	.005
Declared coping	Rho	-,180
	P	,073
Increased behavioural activity	Rho	-,141
	P	,161
Pain control	Rho	-,175
	P	,081
Possibility to reduce pain	Rho	-,124
	P	,220

Key: Rho - Spearman's correlation coefficient; p - significance of the Spearman's correlation coefficient

Source: own calculations

6. Discussion

The type of strategy an individual will develop depends on how they treat their disease and what attitude they adopt to it. The attitude to the disease can have a huge impact on experiencing and dealing with pain [7, 8].

The research presented in this paper shows which strategies for dealing with pain were most often chosen by the respondents. It presents that factors such as the patient's sex and the time elapsed from the diagnosis of sciatica and the intensity of pain which have an impact on the initiation of selected strategies for coping with pain.

The research carried out so far in patients struggling with chronic pain reveals differences in selecting strategies to cope with unpleasant sensations, and are dependent on sociodemographic and clinical factors.

The questionnaire of the Strategy of Coping with Pain has been used in many studies, especially in patients struggling with musculoskeletal disorders.

In our own study, patients with chronic sciatica usually adopted strategies for increased behavioural activity, declared coping and diverting attention. The least popular strategy chosen by the respondents was catastrophizing, re-evaluating pain sensations and ignoring sensations.

Baczewska et al. [9] conducted research in the period from March to May 2016, among 200 people suffering from chronic internal diseases, treated in the Gastroenterology Clinic, at the Endoscopic Laboratory, as well as patients of the Gastroenterology and Rheumatology Clinic of the Specialist Outpatient Clinic of the Independent Clinical Hospital No. 4 in Lublin. The study involved the patients suffering from rheumatoid arthritis, gastric and duodenal ulcer disease, ulcerative colitis, Leśniewski and Crohn's disease, chronic pancreatitis, osteoporosis and systemic lupus erythematosus. Standardized research tools were used in the research. Strategy for Coping with Pain (CSQ) questionnaire, visual and analogue scale (VAS) and author's own questionnaire were employed. The respondents most often used strategies such as: praying, increased behavioural activity as well as declared coping, while - to a lesser extent - they used diverted attention, catastrophizing, ignoring sensations and re-evaluating pain sensations. The most commonly used techniques in patients with chronic sciatica are similar to those obtained in patients with internal diseases. Moreover the part inconsistent with the results of our own research, in the results of Baczewska et al. [9] is that patients

experiencing stronger pain had a greater tendency to ignore sensations, pray/hope, declared coping, and increased behavioural activity. This means that patients with internal diseases in view of aggravation of pain use completely different strategies than patients with chronic sciatica.

In 2012, Zielazny et al. [10] performed a research analysis at the Neurosurgery Ward of the Pomeranian Traumatology Center in Gdansk. The study was conducted among 60 patients (including 40 women and 20 men), aged 22-77 with diagnosed degenerative disease of the spine, and awaiting surgery. The Questionnaire for Pain Relief Strategy (CSQ), the Scale of Disease Acceptance (AIS), the Pain Relief (BPCQ) Questionnaire, and the visual-analogue pain rating scale were used. The respondents most often chose praying/hoping, and declared coping. These are slightly different results than those presented in our own research.

Interestingly, most often the strategies of praying/hoping and declared coping were also chosen by people with degenerative changes of the hip joint. Kurowska et al. [11] conducted research among 100 people qualified for the hip replacement surgery in the Traumatology and Surgery Clinic of the Military Clinical Hospital in Bydgoszcz. Antonovsky SOC-29 Questionnaire was used and the Questionnaire of the Strategy of Coping with Pain as adapted by Juczyński. The results obtained differ from those contained in our own research. They showed that patients awaiting the surgical procedure may be hoping in view of the planned surgery, they direct their prayers to God, engage in prayer. They declare coping, accept their fate, and leave it to higher powers and doctors.

Andruszkiewicz et al. [12] conducted a study among 40 patients with diagnosed osteoarthritis of the hip. This condition limits the performance of everyday activities, hinders walking, and the pain - like in chronic sciatica - occurs not only during movement, but also when at rest. The respondents with coxarthrose most often used the strategy of praying/hoping and declared coping, and least frequently the re-evaluation of pain sensations - as in our own research. In patients with osteoarthritis of the hip, there were no differences revealed at the statistically significant level between women and men in applying the strategy, but they show that actions such as: ignoring pain sensations and declaring coping were definitely more frequently used by men. This is similar to our own research shows. They showed that the result obtained by men on the scale of the strategy of ignoring experiences (mean 14.98) was much higher than the average result of women (mean 12.66). This means that male sex ignores its pain

sensations to a greater degree than the opposite sex. This might be due to environmental conditions (the male behavioural pattern) [12].

Kołpa et al. [13] in the research conducted showed, among others, the influence of age on the selection of individual strategies for coping with pain. The research was carried out in the Pain Treatment Outpatient clinic among 60 patients aged 25-80 struggling with neuropathic pain. The Questionnaire for Strategy of Coping with Pain, the visual-analogue scale of pain assessment and self-questionnaire were used. It was shown that patients over 60 years of age decided more often than younger people to pursue the following strategies: praying/hoping and catastrophizing.

The prolonged exposure to pain contributes to the feeling of helplessness, discouragement, the passive attitude towards suffering and disease. In our own research, there was a significant positive correlation between the length of time that has elapsed from the diagnosis of sciatica and the strategies of coping with pain based on catastrophizing ($Rho = 0.205$; $p = 0.041$) and praying/hoping ($Rho = 0.280$ $p = 0.005$). With the increase in the length of the period that elapsed from the diagnosis, the use of the above-mentioned strategies by the patients intensified. Comparing the studies of Kołpa et al [13] with our own research, it can be concluded that older people (in whom the disease has often continued for many years) and longer struggling with a chronic disease, choose strategies of praying/hoping and catastrophizing. Perhaps the elderly, as a result of helplessness and lack of faith that their health will improve, turn to God for help, and put their hope in faith and prayer [12]. Elderly people struggle with a chronic disease much longer, focus their thoughts on pain sensations, experiencing negative emotions, which are also the result of resignation from social or professional roles performed so far.

In his research Juczyński [14] included people struggling with back pain and neuralgia, showing that patients suffering from these diseases most often chose an active method of coping with pain. The first strategy they applied was increased behavioural activity, as in our own research.

Very often patients, who want to forget about the unpleasant sensations, perform activities that give them joy and a sense of meaning. An example of such a behaviour may be a walk, reading a book or talking to the loved ones. The advantages of behavioural strategies are the prevention and reduction of the intensity level as well as the frequency of pain sensations. Our own results show that the majority of patients struggling with chronic sciatica suffer from

average pain - 44% of respondents, and 32% are patients who struggle with weak sensations. It can be concluded that the symptoms are not so annoying as to disturb the daily functioning of the patients, thus the respondents most often decide to increase the behavioural activity, which, in turn, may contribute to the reduction in pain intensity.

The vast majority of the patients are people under 50 (43%) and between 50 and 60 years old (41%), hence it may be assumed that they are still professionally active (54%), which is why increased behavioural activity was probably the most frequently chosen strategy among those surveyed.

Conclusions

1. Among the strategies for coping with pain in the researched group of patients with sciatica, the behavioural strategy was dominant, i.e. increased behavioural activity, then the respondents chose the cognitive techniques: declared coping and diverting attention.
2. The type of pain management strategies chosen, among patients with diagnosed chronic sciatica, is influenced by sociodemographic factors such as sex.
3. In the opinion of the respondents, the duration of sciatica also influences the choice of strategy for coping with pain. With the increase in the length of the period that elapsed from the diagnosis, patients' cognitive strategies have intensified, i.e. catastrophizing and praying/hoping.
4. There was a significant positive correlation between the severity of patients' pain and the application of the catastrophizing strategy. The respondents experiencing stronger pain had a greater inclination to catastrophizing than respondents with fewer pain sensations.

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